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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,386	09/29/2000	Goro Shibamoto	09792909-0430	1405

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EXAMINER

RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

**Office Action Summary**

Application No.

09/675,386

Applicant(s)

SHIBAMOTO, GORO

Examiner

Mark Ruthkosky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☐ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The rejection of claims 1-5 under 35 U.S.C. 103(a) as being unpatentable over Yde-Anderson (WO 97/03475) in view of Ibbotson et al. (US 4,287,274) is withdrawn.

Claims 1-3 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al. (EP 936,690 A2) in view of Ibbotson et al. (US 4,287,274.)

The instant claims are to a solid electrolyte cell comprising of a rolled electrolyte body consisting of a positive electrode having a strip electrode collector with both sides coated with a positive active material, and a negative electrode having a strip electrode collector with both sides coated with a negative active material, wherein the electrodes are layered with a solid electrolyte in between. The layers are rolled to form a rolled electrode body. The rolled electrodes have a current collector one-side exposed portion at their one end in the longitudinal direction positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference of the rolled electrode body. The rolled electrode body is covered with a multi-layered cell casing.

Segawa et al. (EP 936,690 A2) teaches a non-aqueous electrolyte battery comprising of a rolled electrolyte body consisting of a positive electrode having a strip electrode collector with both sides coated with a positive active material, and a negative electrode having a strip electrode collector with both sides coated with a negative active material, wherein the electrodes are layered with a solid electrolyte in between (see claim 1 and figure 2). The rolled electrodes

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have a current collector one-side exposed portion at their one end in the longitudinal direction positioned at the outermost circumference and the current collector one-side exposed portion covers the outer circumference of the rolled electrode body (see claims 2-3.)

With regard to claim 2, the solid electrolyte layer contains a polymer separator imbibed with a salt and a swelling solvent. For example, carbonates are used as the swelling solvent in the instant example 1. It is also used as a swelling solvent in the reference (see example 1 and page 4, lines 7-12 and 40-50.) Imbibing the solvent into the polymer inherently forms a gel in both the application and the reference.

With regard to claims 3 and 5, the anode and cathodes are shown to have both sides of the collector free of active material at the same ends (see claim 1 and figures 2-3.) The exterior circumference of the wound assembly is covered with the exposed portion of the collector for more than one turn (see page 4, lines 1-30.) Various numbers of turns with and without active materials are described. Although the reference does not teach a current collector with only one-side exposed, a collector having both sides exposed consists of one side exposed. In addition, the reference does discuss a current collector having an active material where only one side is exposed (see page, 4, lines 20-25.)

Segawa et al. (EP 936,690 A2) does not teach a solid electrolyte electrochemical cell comprising a rolled electrode body covered with a multi-layered cell casing. The use of multi-layered cell casings is well described in the art. For example, Ibbotson et al. (US 4,287,274) battery with a zinc can covered with a laminated casing of a including layers of polyethylene terephthalate (see claims 1-10.) It would be obvious to one of ordinary skill in the art at the time the invention was made to use a multi-layered cell casing as described in Ibbotson et al. (US

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4,287,274) in the electrochemical cell of Segawa et al. (EP 936,690 A2) as the casing will provide a sealed, protective container for housing the cell. Further, one of ordinary skill would recognize from Ibbotson et al. (US 4,287,274) that such a casing would provide a thin, lightweight, flexible casing which provides a protective layer against chemical corrosion (see col. 2, lines 5-20.) These general features would be desirable in a casing for the solid electrolyte electrochemical cell of Segawa et al. (EP 936,690 A2.)

#### ***Allowable Subject Matter***

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: claim 4 includes the limitation that the electrodes each have an exposed portion opposite the collector first exposed portion in the lengthwise direction which is rolled on the innermost circumference of the rolled body. Segawa et al. (EP 936,690 A2) does not teach the electrode to have an exposed portion at the opposite length end of the rolled electrode. The opposite end is fully covered as shown in figures 2 and 3 of Segawa et al. (EP 936,690 A2.) As such, the claim is considered allowable over the prior art.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5 have been considered, however, claims 1-3 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al. (EP

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936,690 A2) in view of Ibbotson et al. (US 4,287,274.) The applicant argues that the reference does not teach the positive electrode exposed current collector to cover the outer circumference by one turn or more and that the reference shows a rolled body covered by the negative electrode exposed current collector portion.

Although the reference does provide an embodiment where the rolled body covered by the negative electrode exposed current collector portion, the claims do not preclude the outer portion being the positive current collector (claim 1.) The reference states that the embodiment where the rolled body covered by the negative electrode exposed current collector portion is preferred, which also allows for the rolled body to be covered by the positive electrode exposed current collector portion. From this, it is clear that either current collector may be on the outer surface of the rolled body. Comparative example 7 shows an embodiment where the positive electrode exposed current collector portion is twice as long as the negative electrode exposed current collector portion.

The rejection of claims 1-5 over Yde-Anderson (WO 97/03475) in view of Ibbotson et al. (US 4,287,274) is withdrawn, as the invention does not teach both the positive and negative current collectors to be exposed at the same end of the rolled body. The reference shows the exposed portion of the positive electrode to be at one end and the exposed portion of the negative electrode to be at the opposite end.

#### ***Examiner Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The

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examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Ruthkosky

Primary Patent Examiner

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*Mark Ruthkosky*  
2/6/04